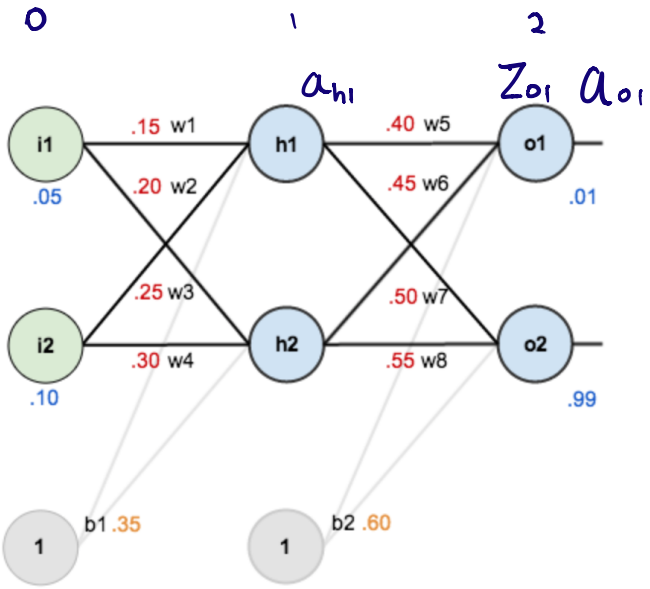

$$E = E_1 + E_2$$

$$E_1 = \frac{1}{2}(y_1 - a_{o1})^2$$

$$E_2 = \frac{1}{2}(y_2 - a_{o2})^2$$

$$a = \sigma(z)$$

$$z^{[i]} = w^{[i]} a^{[i-1]} + b^{[i]}$$

Foward Prop.

$$z^{[i]} = w^{[i]} a^{[i-1]} + b^{[i]} \qquad a^{[i]} = \sigma(z^{[i]})$$

Backward Prop.

$$\frac{\partial E}{\partial w_5} = \frac{\partial E}{\partial E_1} \frac{\partial E_1}{\partial a_{o1}} \frac{\partial a_{o1}}{\partial z_{o1}} \frac{\partial z_{o1}}{\partial w_5}$$

$$= (a_{o1} - y_1)\, a_{o1}\, (1 - a_{o1})\, a_{h1}$$